

## REMARKS/ARGUMENTS

The rejections presented in the Office Action dated May 18, 2007 (hereinafter Office Action) have been considered. . No claims have been amended or added. Claims 24-34 and 61 have been canceled in this Office Action response. Claims 1-23, 35-60, and 62-63 remain pending in the application. Reconsideration of the pending claims and allowance of the application in view of the present response is respectfully requested.

Claims 1-63 are rejected based on 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

The Examiner contends that the language in the claims “using only the single cardiac signal” is not supported by the specification.

Applicant respectfully disagrees. Applicant refers the Examiner to page 23 of the specification as one of many examples of support for the use of a single cardiac signal to discriminate between capture, non-capture and fusion. At lines 14-20, the specification states: “the cardiac signal sensed using a sensing vector different from the pacing vector may be used to classify the cardiac response as one of . . . three types . . . a captured response, non-captured response . . . and a fusion beat.” In at least this embodiment, no other signal is described as being required to discriminate between these types of cardiac responses. Thus, the concept of discrimination between these types of cardiac responses using only the single cardiac signal is supported in the specification.

Claims 1, 3-4, 6, 8-9, 11-12, 15, 17-23, 35-39, 41-42, 45-47, 52, 55-57, 59 and 62 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,456,881 to Bornzin et al. (hereinafter “Bornzin”).

Bornzin does not teach or suggest a system that has the capability, using a single cardiac signal, to classify the cardiac response as capture, non-capture or fusion as recited in independent claims 1, 52 and 57, discriminating between at least three cardiac response types as recited independent claims 15, 39, and 59, or detecting fusion as recited in claims 35, 38 and 62.

The Examiner references elements 332, 335, and 325 of Figure 3 as showing discrimination between capture, non-capture and fusion from the atrial signal. However, to

proceed to any of these elements 332, 335, or 325, the process necessarily flows through element 315. At element 315 the process determines if an evoked response is detected. Determination of whether an evoked response is detected is made by examining the ventricular signal. Thus, the process of Bornzin teaches that both the ventricular and atrial signals must be used to discriminate between capture and fusion. Bornzin does not contemplate discrimination between capture and fusion without the use of both the ventricular signal and the atrial signal. It is further evident from Figure 4 that Bornzin's process is incapable of discriminating between capture and fusion using only the atrial signal.

The Examiner's argument inappropriately requires that various portions of the Bornzin reference (e.g., elements 332, 335, or 325 of Figure 3) are taken out of context with respect to the other elements of the process and rearranged to meet the limitations of the claims.

The Office Action further relies on U.S. Patent No. 6,345,201 which the Examiner assumes was intended to be incorporated by reference. However, this reference is not incorporated by reference or is defectively incorporated by reference in the Bornzin patent thus cannot be used to support an anticipation rejection. Further, the '201 patent also does not mention fusion and the Examiner's rejection depends on picking some elements from the '201 reference, some elements from Bornzin, and putting them together in a way not taught by either reference to reach the Applicant's claims.

Section 2131 of the M.P.E.P. clearly states that "the identical invention must be shown in as complete detail as is contained in the ... claim" (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1239, 9 U.S.P.Q.2d 1913, 1920 (Fed Cir. 1989)). M.P.E.P. §2131 further states that various portions of a reference cannot be asserted together to anticipate a claim unless the reference arranges the limitations as they are arranged in the claim.

Bornzin's use of two signals for discrimination between fusion and capture is further illustrated by Figure 4. In the top set of graphs, the ventricular and atrial signals during fusion are illustrated. In the bottom set of graphs, the ventricular and atrial signals during

capture are illustrated. The system described in Bornzin must examine the ventricular signal 401, 403 to detect the ventricular evoked response 410. The evoked response sensed on the ventricular channel is compared to a template (See Fig. 3, element 320). If the evoked response matches the template, capture is detected (Fig. 3, element 325). Bornzin only proceeds to the step of examining the atrial channel if capture is not detected on the ventricular channel. (See Fig. 3, elements 315 and 320). The Bornzin system cannot discriminate capture from fusion using the atrial signal 402, 404 alone and must use both the atrial and ventricular signals. As is evident from Figure 4, the atrial signal for capture (graph 404) and fusion (graph 402) are substantially identical. (See Bornzin, col. 8 lines 62-64) Bornzin does not discuss any way to determine from the atrial signal alone whether capture or fusion has occurred, but looks to the ventricular signal to accomplish this discrimination.

The Examiner states that “the amendment simply requires that a second electrode combination be used to sense a single cardiac signal for cardiac response classification.” Applicant points out that the independent claims include the element of sensing a single cardiac signal for cardiac response classification along with elements directed to classification of the cardiac response as one of capture, non-capture and fusion (claims 1, 52, 57), or between three types of cardiac response types (claims 15, 39, 59), or detecting fusion (35, 38, 62) using only the single cardiac signal. Bornzin does not teach or suggest detection of fusion, or discrimination between three types of cardiac responses, or discrimination of capture, fusion and non-capture, based only on the single signal as recited in Applicant’s independent claims.

The Examiner states that “the applicant is using a comprising claim, which does not preclude the sensing of other signals.” Applicant points out that, although the use of other signals is not precluded by the claim, the classifying step is construed so that the system or process is capable of separately classifying capture, fusion and non-capture using the cardiac signal. The classifying step is not construed so that the system or process is only capable of performing one of these classifications without the capability of being able to perform the other classifications.

For at least the reasons presented above, independent claims 1, 15, 35, 39, 52, 57, 59, and 62, and all claims dependent thereon, are not anticipated by Bornzin.

Without acquiescing to the Examiner's rejections, claims 24-34 and 61 have been canceled making the rejections to these claims moot.

Claims 2, 16, 40, 53, 58 and 60 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bornzin, as applied above, in view of U.S. Patent No. 5,522,860 to Moline et al. (hereinafter "Moline"). Claims 5, 7, 31 and 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bornzin in view of U.S. Patent No. 6,738,669 to Sloman et al. (hereinafter "Sloman"). Claims 10, 43, 44, 54 and 63 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bornzin. Claims 13, 14 and 48 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bornzin in view of Sloman. Claims 50 and 51 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bornzin in view of U.S. Patent No. 4,878,497 to Callaghan et al. (hereinafter "Callaghan").

Applicant respectfully asserts that the cited combinations fail to support *prima facie* obviousness of the rejected claims.

Each of the rejections under 35 U.S.C. §103(a) rely on Bornzin as the primary reference and use additional references to supply missing features recited in Applicant's dependent claims. Applicant reasserts the arguments made above with respect to Bornzin's failure to teach or suggest the limitations of Applicant's independent claims. The dependent claims include all of the features of the independent claims from which they depend along with additional features. The scope of the prior art must encompass all of the claim limitations to support *prima facie* obviousness. The reference combinations cited in the above rejections fail to support *prima facie* obviousness, at least because the combinations do not teach or suggest all of the claim limitations of the independent claims which are incorporated as elements of the rejected dependent claims. Thus, these dependent claims are patentable over the asserted combinations.

With respect to the rejection of claims 10, 43, 44, and 54, Applicant is not required to state an advantage for each element of the claims. The Examiner states that "it is well known in the art to utilize the shock channel or coil electrodes for sensing. Applicant

requests that the Examiner provide a reference that shows utilizing the shock channel or coil electrodes for discrimination between capture, fusion and non-capture is well known in compliance with MPEP 2144.03 (C). The Examiner states that "it appears that the claimed invention would work equally well with utilizing any electrode configuration that detects the ventricular signal or far-field atrial signal." Applicant requests that the Examiner supply a reference that describes that discrimination between capture, fusion and non-capture works "equally well" with any of these signals is well known in compliance with MPEP 2144.03 (C).

The rejections to claims 28 and 33 are now moot in view of the cancellation of these claims.

Claims 24, 28, 38, 41 and 56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 11 of copending application no. 10/734,599. Claims 24-34, 38, 41 and 56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-94 of copending application no. 10/733,869.

Applicant does not agree that the double patenting rejection is correct, but respectfully asserts that, in view of the amendments to the claims and arguments made above, the Examiner is compelled to withdraw the substantive art rejections of the claims. Once withdrawn, the only rejection remaining in the subject application is the provisional obviousness-type double patenting rejections. In view of MPEP § 804 I(B), Applicant respectfully requests that the provisional obviousness-type double patenting rejections be withdrawn and that the subject application be permitted to issue as a patent.

Applicant incorporates by reference the arguments presented in all previous office action responses into the present response. It is to be understood that Applicant does not acquiesce to Examiner's characterization of the asserted art or Applicant's claimed subject matter, nor of the Examiner's application of the asserted art or combinations thereof to Applicant's claimed subject matter. Moreover, Applicant does not acquiesce to the Examiner's statements or conclusions concerning what would have been obvious to one of ordinary skill in the art, obvious design choices, common knowledge at the time of

Applicant's invention, officially noticed facts, and the like. Applicant reserves the right to address in detail the Examiner's characterizations, conclusions, and rejections in future prosecution.

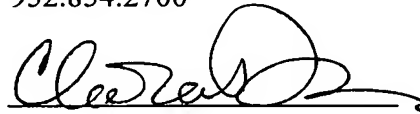
Authorization is given to charge Deposit Account No. 50-3581 (GUID.160PA) any necessary fees for this filing. If the Examiner believes it necessary or helpful, the Examiner is invited to contact the undersigned attorney to discuss any issues related to this case.

Respectfully submitted,

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